

REMARKS

Claims 1-29 are pending.

Claims 22-25 and 27-29 are withdrawn.

Claims 1-21 and 26 are rejected.

Claims 5 and 6 are cancelled in favor of claim 1, as amended hereby. Also, claim 16 is cancelled in favor of amended claim 15.

Claims 1-3, 7-8, and 11-20 are amended.

New claims 30-32 are added. Support for these claims can be found in the specification at page 3, lines 26-28.

No new matter is added.

Claims 1-4, 7-21, 26 and 30-32 remain in the case for reconsideration.

Applicant requests reconsideration and allowance of the claims in light of the above amendments and following remarks.

Drawing Objections

The drawings are objected to under 35 CFR 1.83(a). Claim 1 is amended to delete the limitations, “automatic handling equipment arranged to allow automatic coupling and decoupling of the semiconductor device to the test terminals.” Therefore, the drawing objections are now moot.

Claim Rejections – 35 U.S.C. 112

Claims 1-21 and 26 are rejected under 35 U.S.C. 112, first paragraph. The Examiner has argued that the limitation, “automatic handling equipment arranged to allow automatic coupling and decoupling of the semiconductor device to test terminals,” in claims 1 and 15 is considered a new matter.

Claims 1-21 and 26 are rejected under 35 U.S.C. 112, second paragraph. The Examiner has argued that it is still not clear what is meant by “front side” and “back side” of a printed circuit board. Also, the Examiner has argued that it is also not clear what would constitute “automatic handling equipment” or how it would function.

Although the Applicant does not necessarily agree with the Examiner with respect to these rejections, to facilitate an allowance of this case, the terms, “a front side” and “a back side” are replaced with “a first side” and “a second side,” respectively. Also, the term

“automatic handling equipment” has been deleted from claims 1-21 and 26. Therefore, the Applicant respectfully requests the removal of the rejections under 35 U.S.C. 112.

Claim Rejections – 35 U.S.C. 102(b)

Claims 1-21 and 26 are rejected under 35 U.S.C. 102(b) as being fully anticipated by any one of Kilby et al, Bentler, Sato et al, Cooke or any commercially available double sided board with or without sockets for accepting components.

The rejections are respectfully traversed.

Claim 1 is now amended to recite limitations drawn from claims 5 and 6, i.e., “an interface board coupled to the test terminals, wherein the interface board is adapted to reverse the arrangement of the test terminals.” Also see page 4, lines 4-14 of the present application.

In contrast, none of the cited references teach or disclose, “an interface board coupled to the test terminals, wherein the interface board is adapted to reverse the arrangement of the test terminals,” as recited in claim 1. In particular, Kilby is merely directed to circuit boards suitable for high-density interconnections to dispense with the need for a multilayer circuit board. Sato et al. also merely teaches a high density circuit module to enhance the package density without requiring the sizes of the circuit components to be reduced. Likewise, Cooke merely teaches a method of curing an adhesive provided between the circuit board and the heat sink by applying heat to the adhesive through the heat sink. Lastly, Beutler merely teaches a shield employing opposing cantilever spring fingers adapted to miniature electronic equipment such as portable radio telephones to provide electromagnetic signal shielding in an electronic device.

All of the cited references have nothing to do with testing semiconductor devices. Therefore, there is no need for an interface board to be coupled to the test terminals in these references, not to mention the need for reversing the arrangement of the test terminals, as recited in claim 1 of the present application.

Further, nowhere do these cited references teach or suggest the problems of the claimed invention, e.g., obstruction of the insertion and removal of a memory module from a circuit board during testing of semiconductor devices mounted on the memory module due to peripheral components such as add-in boards (See page 2, lines 4-7 of the present application), nor solutions to the problems of the present invention, e.g., “test terminals formed on the second side of the circuit board and arranged to couple the semiconductor device to the circuit board, *an interface board coupled to the test terminals, wherein the*

interface board is adapted to reverse the arrangement of the test terminals.” See page 2, lines 4-7 of the instant application.

With the structural arrangement of the claimed invention, for example, extra clearance can be obtained to allow the devices and/or the interface board to be oriented in positions that might otherwise be impossible. See page 13-25 of the instant application.

For the reasons discussed above, none of the cited references teach or disclose all of the limitations of claim 1. Consequently, all of the cited references, lacking above limitations of the present invention, does not anticipate the invention recited in independent claim 1. Thus, claim 1, as amended, is novel under 35 U.S.C. § 102(b). Also, claims 2-4, 7-14, which depend therefrom, are also allowable for their dependency and their own merits. For example, none of the cited references teach or suggest, “the interface board is adapted to create a test environment that is the same as actual operating conditions for the semiconductor device,” wherein the interface board is adapted to compensate for environmental differences caused the socket as recited in claims 7 and 10, respectively. In this respect, the Examiner has not pointed to specific teachings of any of the prior art regarding the various dependent claim limitations.

Claim 15 is also amended to recites limitations, which are drawn from claim 16 and similar to those of claim 1, e.g., “the means for coupling the semiconductor device to the second side of the circuit board comprises test terminals formed on the second side of the circuit board and arranged to couple the semiconductor device to the circuit board, and wherein the means for coupling the semiconductor device is adapted to reverse the arrangement of the test terminals,”

For the same reasons discussed above, claim 15 is allowable and claims 17-21, which depend therefrom, are also allowable for their dependency and their own merits.

For the foregoing reasons, reconsideration and allowance of claims 1-4, 7-15, 17-21, 26 and 30-32 of the application as amended is solicited. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Customer No. 20575

Respectfully submitted,

MARGER JOHNSON & McCOLLUM, P.C.



Alan T. McCollom
Reg. No. 28,881

MARGER JOHNSON & McCOLLUM, P.C.
1030 SW Morrison Street
Portland, OR 97205
503-222-3613